

Date: Mon, 2 Aug 93 14:44:18 PDT
From: Info-Hams Mailing List and Newsgroup <info-hams@ucsd.edu>
Errors-To: Info-Hams-Errors@UCSD.Edu
Reply-To: Info-Hams@UCSD.Edu
Precedence: Bulk
Subject: Info-Hams Digest V93 #928
To: Info-Hams

Info-Hams Digest Mon, 2 Aug 93 Volume 93 : Issue 928

Today's Topics:

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      -.-. .-- -.. .-- ...
Computer coax used for RF; info wanted
      Freebies from ARRL HQ
      Ham software for Unix?
Has anyone had experience with the Miracle Baby antenna?
      mod 4 kenwood 440s hf rig wanted
      More on S-units and S-meters
Need explanation of procedure in CW contacts. (2 msgs)
      Perseids meteor shower info wanted.
      S METERS AND MODERN TECHNOLOGY
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Send Replies or notes for publication to: <Info-Hams@UCSD.Edu>
Send subscription requests to: <Info-Hams-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Info-Hams Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/info-hams".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: 30 Jul 93 17:38:31 EDT
From: psinntp!arrl.org@uunet.uu.net
Subject: -.-. .-- -.. .-- ...
To: info-hams@ucsd.edu

In rec.radio.amateur.misc, kevin@TorreyPinesCA.ncr.com (Kevin Sanders) writes:
>In article <1993Jul29.110445@IASTATE.EDU> wjturner@IASTATE.EDU (William J Turner)
writes:

>>

>>I agree SK is no the same intent as "Shave and a haircut", but it also does
>>*not* mean "Silent Key". As someone posted a few months ago, SK is actually a
>>modified 30 using the American Morse (didididadit daaaaah) which is one of the
> ^^^^^^^^^^^

>The underscored portion is something I hear quite frequently from the other
>op just after I turn the freq. over to him. Run together like that, followed
>by a standard kn6fq de xx6xx OK etc.... It sounds like a prosign, but which
>one is it? SN? EF? IR? None of these are listed in my prosign table.
>If it's a telegrapher's code for 3, does 3 have a special meaning?
>I've been wondering about this for a long time.

>

I believe this prosign was used to alert the receiving
operator that transmission was about to commence. Nowadays,
it's just a time filler while the OT collects his/her thoughts.

KR1S

--

jkearman@arrl.org

"I never shot a man who didn't need it." --Clayton Allison

>--

>[] [] [][] [][] Kevin Sanders, KN6FQ NCR Torrey Pines
>[] [] [] [] [] kevin.sanders@torreypinesca.ncr.com (619) 597-3602
>[] [] [][] [][] kevin%beacons@cyber.net
>[] [] [] [] []
>[] [] [] [] [][] Dump MS-DOS. Prevent Programmer Burnout with Linux.
>

Date: Sat, 31 Jul 1993 19:59:46 GMT
From: portal!lhaven.UUmh.Ab.Ca!dreamer@uunet.uu.net
Subject: Computer coax used for RF; info wanted
To: info-hams@ucsd.edu

In article <CAzs4r.Bwz@ryn.mro4.dec.com>, Tom Randolph writes:

>

> In article <CAzoDD.Fq4@crdnns.crd.ge.com>, saltzman@crd.ge.com (Bob Saltzman)
writes...

> >Digital Equipment Corporation uses coaxial cable to implement
> >their "Computer Interconnect" (CI) high speed computer
> >interconnection strategy among VAX and Alpha computers.

> >

> >The cable is about the same size as RG-8 but has a light blue
> >outer covering instead of black. It has N-type connectors attached.

>

> Err, well, I've swept some of the plain old grey-colored Ethernet cable that
> is commonly found lying around the cubicles here... Good for HF, forget it
> above 30 MHz. A couple of the hams picked up a bunch that was going for scrap.

> I haven't gotten ahold of a piece of the N-connected blue cable yet...
> -Tom R. randolph@est.enet.dec.com

Well, I'm currently using 100 ft of thin ethernet cable between my radio and antenna,
works well enough for most local things (repeater, packet, simplex) on 0.5W. Its
some cheap grade of RG-58. Someday when I move the antenna outside, I'm going to
replace the cable with RG-8 (probably).....

--

"Just a Crazy Engineer with an Amiga and an HP48sx" - The Dreamer
Email: dreamer@lhaven.uumh.ab.ca or "Lawrence Chen" @ 1:134/3002
PHONE: +1 403 526 6019 FAX: +1 403 529 5102 CIS: 74200,2431
Lunatic Haven BBS: +1 403 526 6957 | Packet: @VE6FRM.#HAT.AB.CAN.NA
Praxis Society K12 BBS: +1 403 529 1610 | Callsign: VE6LKC

Date: 2 Aug 1993 16:39:08 GMT
From: agate!usenet.ins.cwru.edu!magnus.acs.ohio-state.edu!ksampath@ames.arpa
Subject: Freebies from ARRL HQ
To: info-hams@ucsd.edu

In article <1864@arrl.org> lhurder@arrl.org (Luck Hurder KY1T) writes:

>
>A reminder to all that the American Radio Relay League
>continues to make available to Amateur Radio Operators and
>non-amateurs alike a wide variety of free materials and
>services.
> stuff....
>To obtain any of these free ARRL services, please
>provide me with:
>-
>A. Your name
>B. Your mailing address
>C. A Specific request for either of the two services
> above.
>-
>lhurder@arrl.org Prodigy - MGTS39A, BIX - ARRL,
> MCI Mail - RPALM, MCI Mail - "ARRL", America On Line - "ARRL HQ"
> Compuserve - 70007,3373 (ARRL HQ) -- Genie ARRL.HQ

i did this last tuesday, and by friday i had the copy of
the book i had requested. this is enough service for me
to become an arrl member immediately...

thanks to arrl for this great service.

(the check is in the mail :)

73

krishna

kb8fav

--

dr krishna s. sampath...senior research associate...kss@lenz.eng.ohio-state.edu
ohio state u, electroscience lab.....(614) 292-7981 (w).....(614) 292-7297 (f)
1320 kinneer rd, columbus, oh 43212..06/93 ee phd looking for emi/emc/comm. job

Date: Wed, 28 Jul 1993 15:39:29 GMT
From: munnari.oz.au!hp9000.csc.cuhk.hk!saimiri.primate.wisc.edu!
mimbres.cs.unm.edu!ncar!destroyer!sol.ctr.columbia.edu!howland.reston.ans.net!
math.ohio-state.edu!sdd.hp.com!col.hp.com!news.dtc.hp.com!hpscit.sc.hp.com!
hplextra!hpcc05!hpbbn!hpbbnd!uweb@netw
Subject: Ham software for Unix?
To: info-hams@ucsd.edu

Jim Graham (jim@n5ial.mythical.com) wrote:

:
:
: >I'd also be interested to hear from anyone who is using a Unix box
: >(any flavor) as a ham-shack computer.
:
: Count me in. I haven't been too active lately, so there isn't much that
: the computer has been up to, but this is mainly due to the fact that I
: haven't ported KAMterm, I haven't downloaded KA9Q stuff yet, and I took
: the mobile rig that was on packet and put it in the truck.
:
: But before too long, I hope to have host mode (or KA9Q) up and running,
: and will eventually get around to wiring up my old TR-2400 HT for packet.
: Eventually..... (I've been planning to do this ``anytime now'' for
: months.)
:
There is a KA9Q package for UNIX available. It's called WAMPES and
was originally developed for HP-UX. It's been ported to Linux, 386BSD
Sun, ULTRIX and other UX systems in the meantime. Contact Olaf Erb
<erb@insul.etec.uni-karlsruhe.de> for the Linux version.

Uwe

--

NAME Uwe Behle, HP Boeblingen Instruments Division
EMAIL uweb@hpbbn.bbn.hp.com (internet)\

df3du@db0sao.ampr.org (packet radio)
SNAIL Hewlett-Packard GmbH, BID R&D, Herrenberger Str. 130,\
D-71034 Boeblingen, Germany
PHONE 011-49-7031-142016 (work)

Date: 30 Jul 1993 12:59:14 GMT
From: news!sun1.clark.net!andy@uunet.uu.net
Subject: Has anyone had experience with the Miracle Baby antenna?
To: info-hams@ucsd.edu

Andrew Schwartz Parker (easu348@orion.oac.uci.edu) wrote:
: I was just wondering if anyone has had any experiences with the Miracle Baby
: antenna. I don't know who it is made by, but it is only about an inch long,
: and they claim it has roughly the same characteristics as the stock rubber
: duck antennas. I'm thinking about buying one but they are real expensive for
: what they are (40 dollars). Are they worth it? Thanks.

I bought a "Miracle Baby" rubber duck recently. It is actually a
Comet model CH-32 tri-band antenna, allegedly for 146, 440, and 900 MHz.
It is a total of 1 3/4 inches long, including the BNC. Given the
performance, the price is a bit steep at around \$35 at HRO. I did some
field strength measurements with it. Its transmit performance on 2 meters
is horrible, and there are major S-unit differences on receive. It works
better on 440 and 900 (or 800 if you prefer). But I can assure you, its
performance is not as good as -- or nowhere near -- that of the stock
duckie. The Miracle Baby might be useful under following conditions:

- * When you want to carry your rig in your back pocket as inconspicuously
as possible, without drawing attention to a protruding rubber duckie.
- * At a hamfest, when most of your contacts will be within 100 feet.
- * When your intermod is so severe, you need something which is a hair
better than a dummy load.

My humble opinion: Don't waste your money.

Date: 29 Jul 93 14:07:53 EST
From: titan.ksc.nasa.gov!k4dii.ksc.nasa.gov!user@ames.arpa
Subject: mod 4 kenwood 440s hf rig wanted
To: info-hams@ucsd.edu

In article <1993Jul28.002314.5010@uoft02.utoledo.edu>,
aschlie@uoft02.utoledo.edu (A.Schliesser) wrote:

> The mod makes the antenna tuner tracks the frequency on receive without
> transmitting.

Tony-

I'm not sure how the TS-440 compares to the TS-450. (I have the TS-690.)
It seems that the 450 remembers the approximate tuner settings in each band
segment. Size of a segment depends on which band. For example, Ten Meters
has several segments, and lower bands probably have fewer.

In the 450, you can engage the tuner without transmitting. You just don't
push the tune button. However, you have to tune at least once, in order to
store the settings in memory, for each band segment.

If you only use standard ham frequencies, you can set the 450 up ahead of
time, performing the tune function in each band segment. From that point
on, the tuner will automatically track the band segment while in receive
mode, as long as it is enabled. To have this capability outside the Ham
Bands, you would first have to do the all-frequency transmit mod, and then
tune in each segment of interest. Bear in mind that tuning for some
antennas may be so critical, that the tuner setting isn't adequate for the
entire band segment.

As far as I know, the TS-450 tuner operates in both transmit and receive,
but the TS-440 tuner operates in transmit only. I think I saw a mod for
the TS-440, that gets around this, and may be the mod you are looking for.
However, you should first verify that the 440 has the tuner memory feature.

73, Fred, K4DII

Date: 30 Jul 93 20:29:08 GMT
From: news-mail-gateway@ucsd.edu
Subject: More on S-units and S-meters
To: info-hams@ucsd.edu

This is a very interesting discussion on signal strength. How many of you
remember the SUPER REGENERATIVE receiver? A few years back (perhaps too many)
when the super regen was a popular receiver on the VHF and UHF bands, signal
strength reports were common and reasonably accurate - and without an "S"
meter. Accurate from the standpoint that the reports were consistent from day
to day depending upon signal propagation.

The technique consisted of audibly comparing the hiss level generated by the
quench action within the receiver VS the quieting of the hiss by the received
signal. At S9 the quench hiss was completely removed. There was no audible
way of determining if the signal exceeded S9, however. To make more sense of

the signal report, readability numbers (R1-R5) were also used. A signal that was S1-2 probably had a readability of R1-2 as well.

With the advent of S-meters, the art of lying to your contact became evident. No one desired to offend the other person about having a weak signal and would give an S reading well in excess of what the meter indicated.

In the beginning of S-meter use, the S9 (in the beginning it was R9 for relative signal strength and later changed to S) was located at about the 85% point on the meter scale. As time progressed, the S9 position began to move down to about midpoint of the meter scale. I would have to speculate that moving the S9 point down made it was much easier to give a person an outstanding signal strength report - no need to offend anyone that way. I presume that the intention of holding a 6db per S unit began to fall apart during this period. As late as five years ago, our local college continued to teach in communications classes that the S-meter standard was 6db per S unit.

73

Hugh Wells, W6WTU

Date: Mon, 2 Aug 1993 12:12:38 EDT
From: mulvey!rich@uunet.uu.net
Subject: Need explanation of procedure in CW contacts.
To: info-hams@ucsd.edu

etxtsg@solsta.ericsson.se (Thomas Grennefors TX/DKF) writes:

> I am in the procedure of learning CW to get my HF proviliges.
> I have now gotten so far that i started to listen to QS0:s in
> the ham bands. But somtimes i hear the following.
> = UR RST is 599/5NN =
> What in the heck does that 5NN means.

N is often used as shorthand for 9 - it's much quicker than ----. :-)

>
> I must say that i wiched i lived in america where the lowes CW speed
> to get a licence is 5 wpm. Here in sweden it's 8 wpm. If it would have
> been 5 wpm i would be on HF by now. I hit a plateu at 6 wpm and held there
> for 2 months, but now im close to 11 wpm. The application for testing
> is in the mail. So now im starting to get interested in operational
> procedures. Are there anyting else one should think of when having a
> CW contact? Any hinbts are welcome.
>

Well, as a newbie myself, I've picked up one or two things. :-) I have

a text file that I could mail you that describes the use of prosigns, etc.
Good luck with the code! I've had tons of fun in the past 2 months with
CW and my 5 watt rig. :-)

- Rich

--

Rich Mulvey
rich@mulvey.com

Amateur Radio: N2VDS

787 Elmwood Terrace
Rochester, NY 14620

Date: Fri, 30 Jul 1993 14:22:27 GMT
From: europa.eng.gtefsd.com!howland.reston.ans.net!vixen.cso.uiuc.edu!
newsrelay.iastate.edu!news.iastate.edu!IASTATE.EDU!wjturner@uunet.uu.net
Subject: Need explanation of procedure in CW contacts.
To: info-hams@ucsd.edu

In article <etxtsg.744029082@solsta-c>, etxtsg@solsta.ericsson.se (Thomas
Grennefors TX/DKF) writes:

> I am in the procedure of learning CW to get my HF proviliges.
> I have now gotten so far that i started to listen to QSO:s in
> the ham bands. But somtimes i hear the following.
> = UR RST is 599/5NN =
> What in the heck does that 5NN means.

First of all, good luck! I hope you'll enjoy CW as much as I do.

OK, here the "5NN" means "599". Many hams send N to mean 9. I think some also
use T for 0 and E for 5. Any others?

>
> I must say that i wiced i lived in america where the lowes CW speed
> to get a licence is 5 wpm. Here in sweden it's 8 wpm. If it would have
> been 5 wpm i would be on HF by now. I hit a plateu at 6 wpm and held there
> for 2 months, but now im close to 11 wpm. The application for testing
> is in the mail. So now im starting to get interested in operational
> procedures. Are there anyting else one should think of when having a
> CW contact? Any hinbts are welcome.

Mostly, listen and learn, I guess. As we've been discussing in the "CW
Prosigns" thread, sometimes procedures change from the way they were intended.

Other than that, be polite and considerate, and have a great time!!!

73, Will N0RDV

--

Will Turner, NORDV -----
wjturner@iastate.edu | "Are you going to have any professionalism, |
twp77@isuvax.iastate.edu | or am I going to have to beat it into you?" |
TURNERW@vaxld.ameslab.gov -----

Date: Fri, 30 Jul 1993 22:00:29 GMT
From: news.cerf.net!crash!newshub.nosc.mil!dog.ee.lbl.gov!overload.lbl.gov!agate!
spool.mu.edu!olivea!sgigate!odin!chuck.dallas.sgi.com!adams@network.ucsd.edu
Subject: Perseids meteor shower info wanted.
To: info-hams@ucsd.edu

In article <1993Jul30.202101.18112@rosevax.rosemount.com>,
scotbri@flower.samsung.com (Scott Brigham, corp, flower) writes:
|> From article <29JUL93.18194086@pfc.mit.edu>, by mrl@pfc.mit.edu (Mark London):
|> > Can anyone tell me when the peak of the Perseids meteor shower is supposed to
|> > peak and in which direction is the best to look for them? Thanks.
|>
|> >
|> Best direction: UP! ;^)
|> =====
|> scotbri@rosemount.com
|> Scott Brigham (AA0HU) "Yes, THAT Scott Brigham -- the famous one."
|> St. Paul, MN USA
|> =====

additional info - here in texas, we've set a new record in the
dallas-fort worth area for 5 weeks without rain and we'll have the
first july on record without rain.

we've gone 6 or seven days in a row with temperature at 100 or more.

what's this got to do with the Perseids meteor shower. guarantee it
will rain like never before this year for that week. greatest meteor
shower of the century coming up and we're gonna miss it. ;-)

last sunday morning, 6 to 7 am CDT. watched XEW-TV on channel 9 with
tv yagi in attic. XEW is in mexico somewhere. someone able to tell us
where?

anyone working 6 meters and up (or is that down?). up in freq down in
wavelength. how is the propagation been up there? i'd guess it's been
very good.....

73 de k5fo dit dit

all this related to meteor scatter propagation.....

--

-----cut here-----

Chuck Adams, K5FO - CP60
adams@sgi.com

Date: 31 Jul 1993 11:57:33 -0700
From: swrinde!gatech!howland.reston.ans.net!spool.mu.edu!olivea!apple.com!
apple.com!not-for-mail@network.ucsd.edu
Subject: S METERS AND MODERN TECHNOLOGY
To: info-hams@ucsd.edu

ODONNELL@MAR65.MAR.ORA.FDA.GOV writes:

>Paul, OH3LWR wrote:

>>One method to calibrate receiver gain (and the signal meter) is to
>>rapidly switch between the antenna and a known noise source (a 50 ohm
>>resistor at room temperature). The gain is adjusted during the noise
>>period to give a predetermined output and when switched to the antenna,
>>the output is proportional to the well known noise source. This method
>>is used to calibrate radio telescopes.

>This is similar to what was suggested by Gary and Kevin. Good idea!

This was first proposed by Robert Dicke (yes, same fellow who proposed
looking for the 3 degree background radiation that Arno and Penzias
finally found), past of Princeton, in the paper:

Dicke, R. H., Rev. Sc. Instr., Vol 17, pg. 268, (1946).

When I was a young fella at NRAO in the late-'60s, we used to call the
receivers that are basedlined this way "Dicke-switched Radiometers."

John (W8JK) Kraus' book "Radio Astronomy" is a good reference. I have
found another book (where I got the reference to the 1946 paper), if
you are interested in radio astronomy instrumentation:

Christiansen, W. N., J. A. Ho:gbom, "Radiotelescopes", Second
Edition, Cambridge University Press, 1987. ISBN 0 521 34795 5.
(apparently ISBN 0 521 26209 7 in hard cover)

Kok Chen, AA6TY
Apple Computer, Inc.

kchen@apple.com

Date: 30 Jul 1993 13:37:24 -0700
From: pravda.sdsc.edu!news.cerf.net!usc!cs.utexas.edu!asuvax!chnews!
ornews.intel.com!ornews.intel.com!not-for-mail@network.ucsd.edu
To: info-hams@ucsd.edu

References <1993Jul28.233437.2614@TorreyPinesCA.ncr.com>,
<1993Jul29.111429@IASTATE.EDU>, <m5iklqINNla1@news.bbn.com>ntel.c
Subject : Re: CW Prosigs (was: -... - - --)

In article <m5iklqINNla1@news.bbn.com> levin@bbn.com (Joel B Levin) writes:
>wjturner@IASTATE.EDU (William J Turner) writes:
>|you give is after a (long) transmission. Personally, I usually, just say
>|something like "BK TO U" or nothing at all.
>
>Often when I do this (followed by the callsigns and a <K>), and
>sometimes when I don't, the other person comes back with "BK" before
>anything else. Why is this? Why would anyone ever start their
>transmission with "BK"? I assumed it might be used for interrupting
>someone (who presumably is operating full- or semi-breakin).
>

He's trying to work break-in with you, a procedure where you dispense with
the callsign-de-callsign at the beginning and end of each message and instead
send BK (all run together real fast) at the beginning and end of each blast
of conversation. This can get real interesting, especially if transmissions
are kept short or there is more than one station participation (KN-NOT!).
He probably thought you sent BK instead of B K but the keyboards and paddles
have ruined the art so its not surprising. Another development that's
ruined multi-station QSO's is the tight filters that many people leave on
all the time.
Try inserting BK into some ongoing QSO sometime and see what happens.

--
WA7LDV zardoz@ornews.intel.com

Date: Sun, 1 Aug 1993 23:40:53 GMT
From: munnari.oz.au!bruce.cs.monash.edu.au!trlluna!titan!pcies4.trl.OZ.AU!
drew@uunet.uu.net

To: info-hams@ucsd.edu

References <9307281246.AA16023@ucsd.edu>, <1993Jul28.085859@IASTATE.EDU>,
<DRT.93Jul29103806@cacciatore.mit.edu>ruc
Subject : Re: -.-. .-- -. . .-- ...

In article <DRT.93Jul29103806@cacciatore.mit.edu> drt@athena.mit.edu (David R Tucker) writes:

>From: drt@athena.mit.edu (David R Tucker)

>Subject: Re: -.-. .-- -. . .-- ...

>Date: 29 Jul 1993 14:38:07 GMT

>In article <CAw19r.3sD@news.iastate.edu> wjturner@iastate.edu (William J Turner) writes:

>

> In article <CAvvEw.7J@fc.hp.com> jayk@fc.hp.com writes:

> >

> >Lots of ops finish a QSO with callsign then ...-.- ..

>

> True, but my point was that is technically incorrect, not that it doesn't happen.

>

>Could someone explain (not guess) *why* this is? Without appealing to authority, I mean (i.e., "The book says so!!!"). I have never understood it. It can't be because you want to send your callsign last, as CL, K, {KN}, et al., are properly sent after the callsign.

>

>What difference does it make if {SK} is, too??

>

>-drt

>--

>-----

>|David R. Tucker KG2S drt@athena.mit.edu|

>-----

>|'Most political sermons tech the congregation nothing except |

>|what newspapers are taken at the Rectory.' -C.S. Lewis |

>-----

Hi David,

The two dits at the end of a QSO (SK e e) is a little flourish, just for fun, to tie the ribbons on an enjoyable QSO.

73 Drew, VK3XU.

Date: 30 Jul 93 12:49:03 GMT

From: ogicse!emory!kd4nc!ke4zv!gary@network.ucsd.edu

To: info-hams@ucsd.edu

References <CAw5Jn.Etn@srgenprp.sr.hp.com>, <1993Jul29.123616.11120@ke4zv.uucp>, <1993Jul30.074645.13815@nnntp.nta.no>

Reply-To : gary@ke4zv.UUCP (Gary Coffman)

Subject : Re: TS50 Illegal!

In article <1993Jul30.074645.13815@nnntp.nta.no> klr@hal.nta.no (K}re Lind FDM) writes:

[bunch deleted]

>>There's a cute little vector diagram on pg 527 of the Fourth Edition

>>of _Reference Data for Radio Engineers_ that shows all this. I knew

>>staring at vector plots would pay off some day. :-)

>>Gary

>

>The math here seems all right, but the assumption that the two sidebands of an
>AM signal are in quadrature does _not_ hold. The phase relationship between the
>sidebands is changing at a rate of 2π (i.e. the frequency difference between
>them). Thus, once every period of the modulating signal, the sidebands do add
>_in phase_ with each other, and also with the carrier at the same time,
>yielding a signal having an amplitude twice that of the unmodulated carrier.
>If the modulating frequency p is much lower than the carrier frequency, this
>condition will extend over several periods of the carrier, and the power will
>be four times that of the unmodulated carrier during this condition.

Thanks Kare, a lightbulb went on. The static vector diagram was showing only a snapshot. I now see that the sideband vectors are rotating in opposite directions. I wasn't catching that before. (I should have because of the sign, but the diagram had me mesmerized.)

Gary

--

| | | | | |
|-----------------------------|--|--------------|--|--------------------------|
| Gary Coffman KE4ZV | | You make it, | | gatech!wa4mei!ke4zv!gary |
| Destructive Testing Systems | | we break it. | | uunet!rsiatl!ke4zv!gary |
| 534 Shannon Way | | Guaranteed! | | emory!kd4nc!ke4zv!gary |
| Lawrenceville, GA 30244 | | | | |

End of Info-Hams Digest V93 #928
